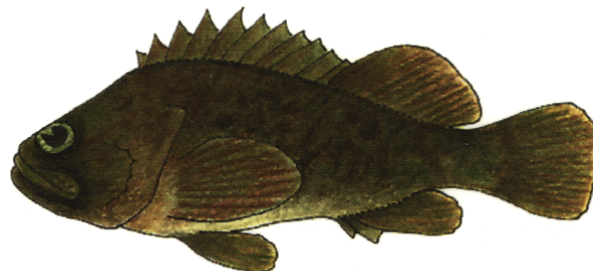


Grass Rockfish, *Sebastes rastrelliger*

1993-1999 Commercial Catch by Ports & Blocks



Marine Fishery Profiles

Volume 1: Nearshore

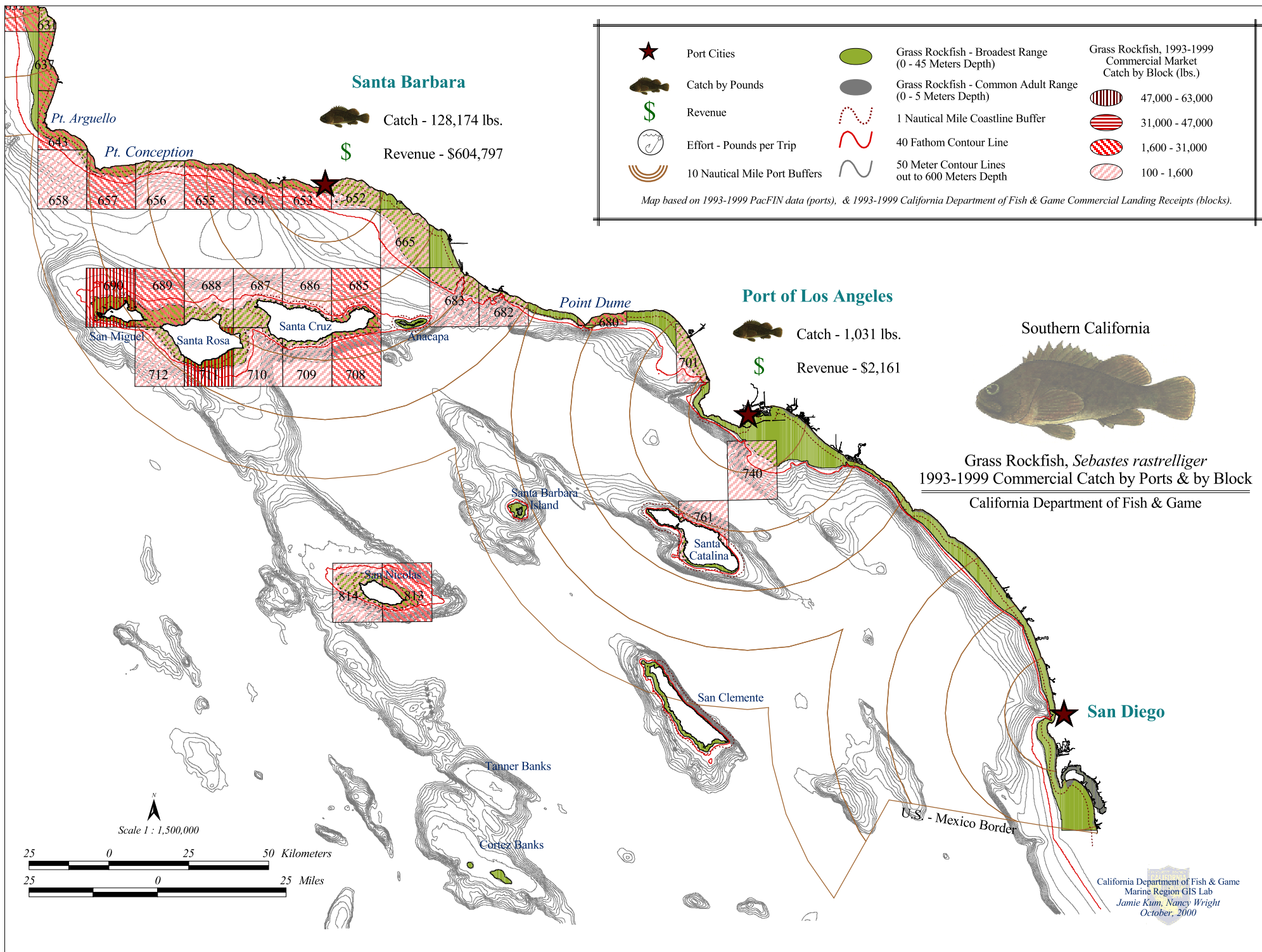
Marine Region GIS Lab

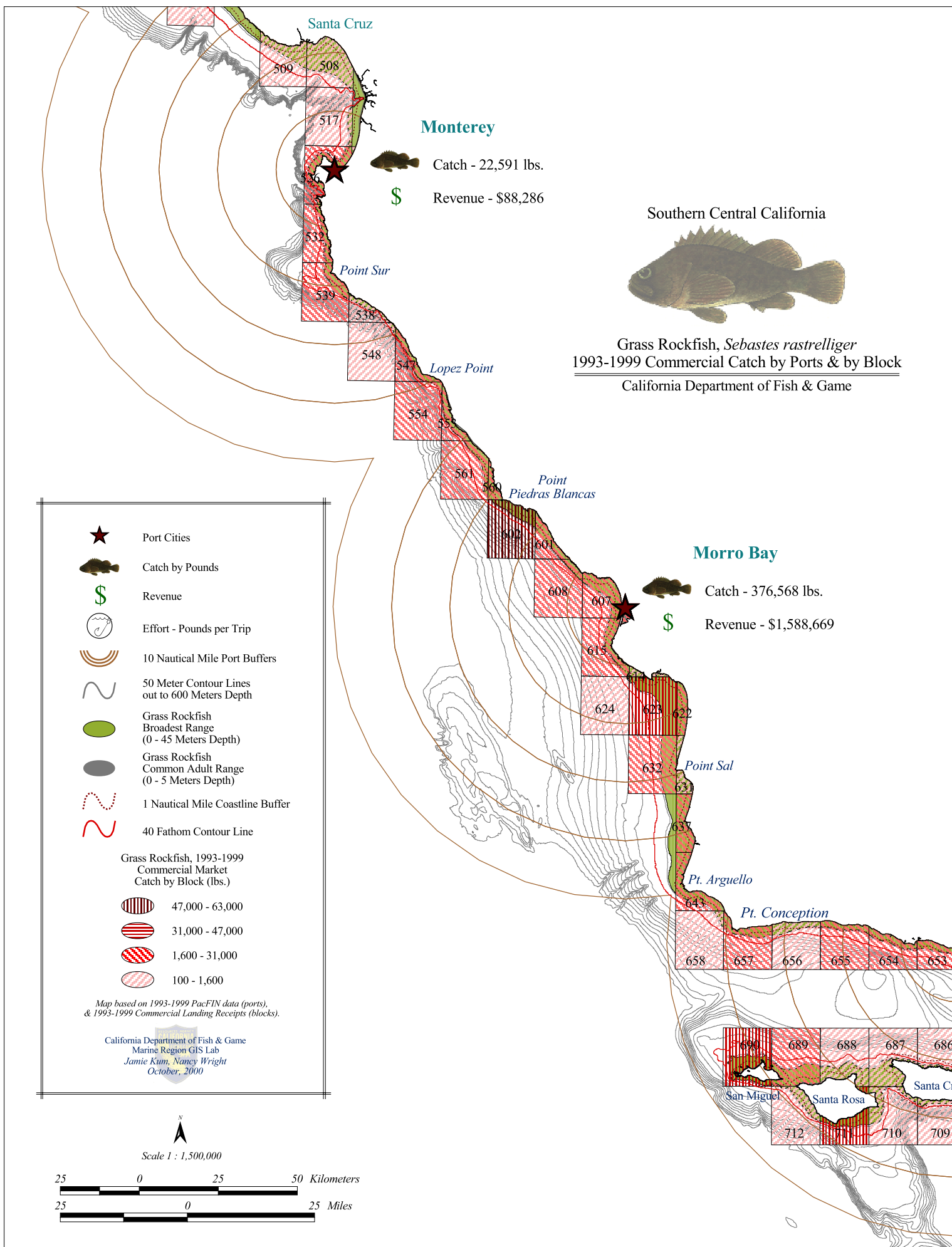
Nancy Wright	Eric Knaggs
Jamie Kum	Bob Leos
Chad King	Colleena Perez



California Department of Fish & Game
Marine Region

December 2000





Northern Central California



Grass Rockfish, *Sebastes rastrelliger* 1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game

Bodega Bay



Catch - 11,239 lbs.



Revenue - \$44,533

San Francisco



Catch - 5,708 lbs.



Revenue - \$16,002

Half Moon Bay

Santa Cruz

Monterey



Catch - 22,591 lbs.



Revenue - \$88,286

- ★ Port Cities
- Catch by Pounds
- \$ Revenue
- Effort - Pounds per Trip
- 10 Nautical Mile Port Buffers
- 50 Meter Contour Lines out to 600 Meters Depth
- Grass Rockfish Broadest Range (0 - 45 Meters Depth)
- Grass Rockfish Common Adult Range (0 - 5 Meters Depth)
- 1 Nautical Mile Coastline Buffer
- 40 Fathom Contour Line

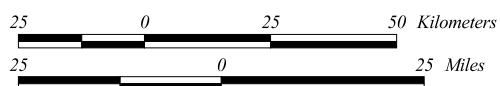
Grass Rockfish, 1993-1999
Commercial Market
Catch by Block (lbs.)

- 47,000 - 63,000
- 31,000 - 47,000
- 1,600 - 31,000
- 100 - 1,600

Map based on 1993-1999 PacFIN data (ports),
& 1993-1999 Commercial Landing Receipts (blocks).

California Department of Fish & Game
Marine Region GIS Lab
Jamie Kim, Nancy Wright
October, 2000

Scale 1 : 1,500,000



Northern California



Grass Rockfish, *Sebastes rastrelliger* 1993-1999 Commercial Catch by Ports & by Block California Department of Fish & Game

- ★ Port Cities
- Catch by Pounds
- \$ Revenue
- Effort - Pounds per Trip
- 10 Nautical Mile Port Buffers
- 50 Meter Contour Lines out to 600 Meters Depth
- Grass Rockfish Broadest Range (0 - 45 Meters Depth)
- Grass Rockfish Common Adult Range (0 - 5 Meters Depth)
- 1 Nautical Mile Coastline Buffer
- 40 Fathom Contour Line

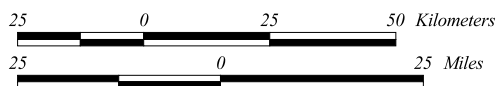
Grass Rockfish, 1993-1999
Commercial Market
Catch by Block (lbs.)

- 47,000 - 63,000
- 31,000 - 47,000
- 1,600 - 31,000
- 100 - 1,600

Map based on 1993-1999 PacFIN data (ports),
& 1993-1999 Commercial Landing Receipts (blocks).

California Department of Fish & Game
Marine Region GIS Lab
Jamie Kim, Nancy Wright
October, 2000

Scale 1 : 1,500,000



Crescent City



Catch - 7,025 lbs.



Revenue - \$29,066

Eureka



Catch - 364 lbs.



Revenue - \$1,619

Cape Mendocino

Punta Gorda

Fort Bragg



Catch - 20,592 lbs.



Revenue - \$94,323

Point Arena

Figure 1. (refer to table 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of Grass Rockfish Caught and Average Price per Pound by Month

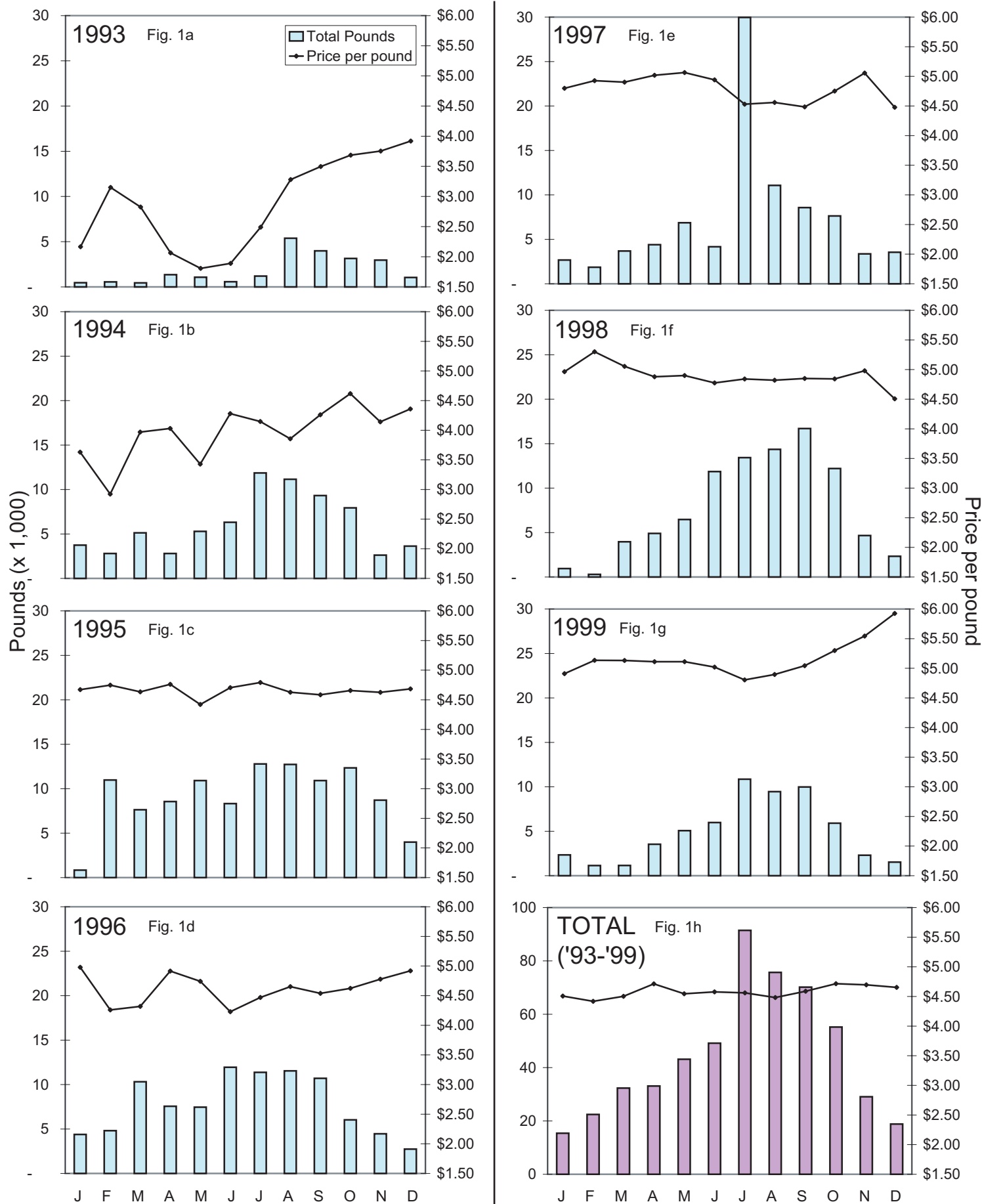


Table 1. (refer to fig. 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of Grass Rockfish Caught and Average Price per Pound by Month

1993
Table 1a

Month	Total Pounds	Price per Pound
Jan	461	\$2.17
Feb	552	\$3.15
Mar	443	\$2.83
Apr	1,347	\$2.06
May	1,072	\$1.81
Jun	567	\$1.89
Jul	1,193	\$2.49
Aug	5,381	\$3.28
Sep	3,991	\$3.50
Oct	3,145	\$3.69
Nov	2,964	\$3.75
Dec	1,042	\$3.92
Total	22,156	\$3.21

1997
Table 1e

Month	Total Pounds	Price per Pound
Jan	2,675	\$4.80
Feb	1,865	\$4.93
Mar	3,683	\$4.90
Apr	4,393	\$5.02
May	6,869	\$5.06
Jun	4,162	\$4.94
Jul	29,961	\$4.53
Aug	11,072	\$4.56
Sep	8,570	\$4.48
Oct	7,631	\$4.75
Nov	3,364	\$5.06
Dec	3,548	\$4.48
Total	87,793	\$4.68

1994
Table 1b

Month	Total Pounds	Price per Pound
Jan	3,743	\$3.63
Feb	2,798	\$2.92
Mar	5,125	\$3.97
Apr	2,806	\$4.03
May	5,292	\$3.43
Jun	6,318	\$4.28
Jul	11,864	\$4.15
Aug	11,149	\$3.86
Sep	9,316	\$4.26
Oct	7,937	\$4.62
Nov	2,621	\$4.14
Dec	3,633	\$4.36
Total	72,601	\$4.05

1998
Table 1f

Month	Total Pounds	Price per Pound
Jan	946	\$4.96
Feb	299	\$5.30
Mar	3,959	\$5.05
Apr	4,900	\$4.88
May	6,466	\$4.90
Jun	11,863	\$4.77
Jul	13,429	\$4.84
Aug	14,362	\$4.82
Sep	16,702	\$4.85
Oct	12,204	\$4.84
Nov	4,659	\$4.98
Dec	2,332	\$4.51
Total	92,120	\$4.85

1995
Table 1c

Month	Total Pounds	Price per Pound
Jan	842	\$4.67
Feb	10,976	\$4.75
Mar	7,635	\$4.63
Apr	8,551	\$4.76
May	10,912	\$4.42
Jun	8,327	\$4.70
Jul	12,786	\$4.79
Aug	12,727	\$4.63
Sep	10,915	\$4.58
Oct	12,341	\$4.66
Nov	8,706	\$4.63
Dec	3,994	\$4.68
Total	108,714	\$4.66

1999
Table 1g

Month	Total Pounds	Price per Pound
Jan	2,339	\$4.91
Feb	1,138	\$5.14
Mar	1,154	\$5.13
Apr	3,538	\$5.11
May	5,069	\$5.11
Jun	5,979	\$5.02
Jul	10,856	\$4.80
Aug	9,455	\$4.90
Sep	9,978	\$5.04
Oct	5,912	\$5.30
Nov	2,300	\$5.54
Dec	1,530	\$5.93
Total	59,249	\$5.05

1996
Table 1d

Month	Total Pounds	Price per Pound
Jan	4,386	\$4.98
Feb	4,812	\$4.26
Mar	10,311	\$4.32
Apr	7,557	\$4.91
May	7,455	\$4.74
Jun	11,949	\$4.23
Jul	11,371	\$4.47
Aug	11,538	\$4.65
Sep	10,700	\$4.54
Oct	6,025	\$4.62
Nov	4,465	\$4.78
Dec	2,740	\$4.92
Total	93,310	\$4.56

TOTAL
'93 - '99
Table 1h

Month	Total Pounds	Price per Pound
Jan	15,393	\$4.51
Feb	22,440	\$4.42
Mar	32,310	\$4.50
Apr	33,091	\$4.71
May	43,136	\$4.55
Jun	49,165	\$4.58
Jul	91,461	\$4.56
Aug	75,685	\$4.48
Sep	70,172	\$4.59
Oct	55,196	\$4.72
Nov	29,078	\$4.70
Dec	18,819	\$4.65
Total	535,944	\$4.58

Figure 2. (refer to table 2) Pacific Fisheries Information Network Data (1993 - 1999)
Total Pounds of Grass Rockfish Caught and Average Price per Pound by Month

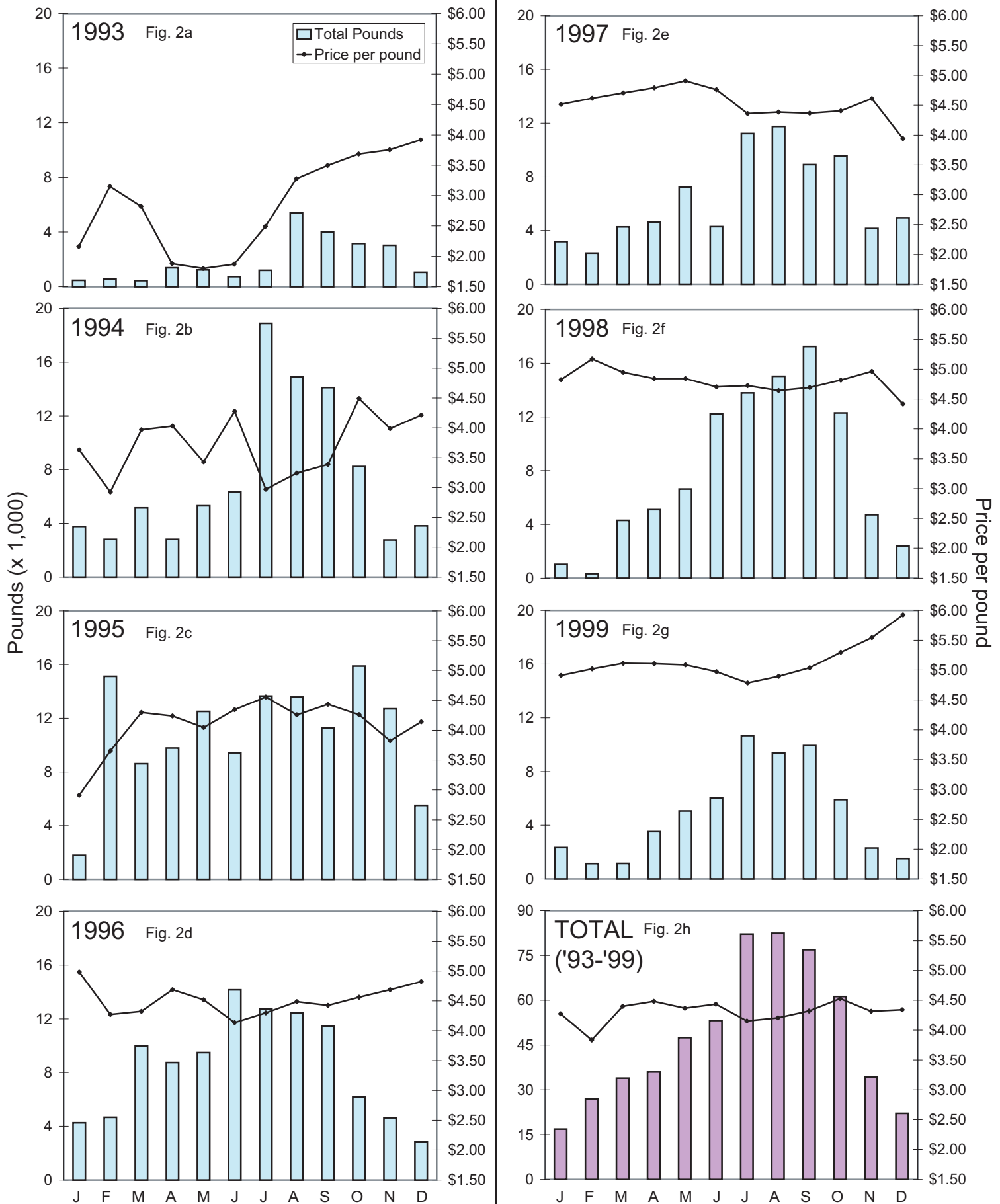


Table 2. (refer to fig. 2) Pacific Coast Fisheries Information Network Data (1993 - 1999)
Total Pounds of Grass Rockfish Caught and Average Price per Pound by Month

1993
Table 2a

Month	Total Pounds	Price per Pound
Jan	468	\$2.16
Feb	555	\$3.15
Mar	443	\$2.82
Apr	1,385	\$1.88
May	1,225	\$1.80
Jun	736	\$1.87
Jul	1,195	\$2.49
Aug	5,398	\$3.28
Sep	4,001	\$3.50
Oct	3,159	\$3.69
Nov	3,026	\$3.75
Dec	1,050	\$3.92
Total	22,641	\$3.18

1997
Table 2e

Month	Total Pounds	Price per Pound
Jan	3,179	\$4.51
Feb	2,325	\$4.62
Mar	4,268	\$4.71
Apr	4,618	\$4.79
May	7,226	\$4.91
Jun	4,291	\$4.76
Jul	11,229	\$4.36
Aug	11,754	\$4.39
Sep	8,915	\$4.37
Oct	9,543	\$4.41
Nov	4,153	\$4.61
Dec	4,950	\$3.94
Total	76,451	\$4.49

1994
Table 2b

Month	Total Pounds	Price per Pound
Jan	3,764	\$3.63
Feb	2,815	\$2.93
Mar	5,148	\$3.97
Apr	2,813	\$4.03
May	5,306	\$3.43
Jun	6,336	\$4.28
Jul	18,897	\$2.97
Aug	14,913	\$3.24
Sep	14,108	\$3.39
Oct	8,234	\$4.49
Nov	2,769	\$3.99
Dec	3,818	\$4.21
Total	88,921	\$3.55

1998
Table 2f

Month	Total Pounds	Price per Pound
Jan	1,025	\$4.82
Feb	333	\$5.17
Mar	4,303	\$4.95
Apr	5,097	\$4.84
May	6,635	\$4.84
Jun	12,226	\$4.70
Jul	13,787	\$4.73
Aug	15,032	\$4.64
Sep	17,239	\$4.69
Oct	12,301	\$4.82
Nov	4,719	\$4.96
Dec	2,372	\$4.42
Total	95,069	\$4.75

1995
Table 2c

Month	Total Pounds	Price per Pound
Jan	1,798	\$2.91
Feb	15,120	\$3.65
Mar	8,622	\$4.30
Apr	9,779	\$4.24
May	12,508	\$4.05
Jun	9,428	\$4.35
Jul	13,652	\$4.56
Aug	13,578	\$4.26
Sep	11,289	\$4.43
Oct	15,884	\$4.26
Nov	12,706	\$3.82
Dec	5,514	\$4.14
Total	129,878	\$4.16

1999
Table 2g

Month	Total Pounds	Price per Pound
Jan	2,346	\$4.91
Feb	1,141	\$5.02
Mar	1,156	\$5.11
Apr	3,527	\$5.11
May	5,072	\$5.09
Jun	6,018	\$4.97
Jul	10,681	\$4.78
Aug	9,370	\$4.90
Sep	9,934	\$5.04
Oct	5,909	\$5.30
Nov	2,313	\$5.54
Dec	1,536	\$5.93
Total	59,003	\$5.04

1996
Table 2d

Month	Total Pounds	Price per Pound
Jan	4,261	\$4.98
Feb	4,664	\$4.27
Mar	9,971	\$4.33
Apr	8,744	\$4.69
May	9,490	\$4.52
Jun	14,158	\$4.14
Jul	12,745	\$4.30
Aug	12,442	\$4.49
Sep	11,442	\$4.43
Oct	6,202	\$4.56
Nov	4,628	\$4.69
Dec	2,842	\$4.82
Total	101,589	\$4.45

TOTAL
'93 - '99
Table 2h

Month	Total Pounds	Price per Pound
Jan	16,841	\$4.27
Feb	26,953	\$3.83
Mar	33,911	\$4.40
Apr	35,963	\$4.48
May	47,462	\$4.37
Jun	53,193	\$4.43
Jul	82,186	\$4.15
Aug	82,487	\$4.21
Sep	76,928	\$4.32
Oct	61,232	\$4.53
Nov	34,314	\$4.32
Dec	22,082	\$4.34
Total	573,552	\$4.31

Abbreviated Life History of the Grass Rockfish (*Sebastes rastrelliger*)

Grass rockfish are green with black or gray mottling, somewhat resembling kelp rockfish except that kelp rockfish are usually brown or gray-brown.

Distribution, Stock Structure and Migration

Grass rockfish are found from Yaquina Bay, Oregon to Bahia Playa Maria, central Baja California, although they are most common from northern California south. This is a shallow water species, commonly found from the intertidal to 20 ft, but they have also been found to depths of 150 ft. As juveniles they are pelagic, but as they mature and become adults, they will be associated with kelp beds and reefs. This species is considered residential, moving less than a meter from their home range.

Age and Growth

Grass rockfish have been aged to a maximum of 23 yr. Based on a calculated age-length relationship, an 11.5-in. TL grass rockfish is approximately 5 yr old, a 16-in. TL fish is approximately 10 yr old, and an 18-in. TL fish is approximately 14 yr old. Maximum length recorded for this species is 22 inches.

Reproduction, Fecundity and Seasonality

Male and female grass rockfish reach first maturity at different lengths and ages. First maturity in males was considered to be 8.7 in. TL at a corresponding age of 2 yr off the coast of southern California, whereas the smallest mature male observed measured 14.1 in. TL and was 8 yr of age off central California. First maturity in females was considered to be 8.7 in. TL with no corresponding age off the coast of southern California, whereas the smallest mature female observed measured 12.8 in. TL and was 5 yr of age off central California. It was also determined that fifty percent of the males would reach maturity at 9.6 in. TL and 3.5 yr of age, and half of the females would reach maturity at 9.4 in. TL and 3.7 yr of age.

In California waters, spawning takes place between November and March with peak spawning in January and February. When first released, the larvae are between 0.17 and 0.18 in. SL and after 2 months, when they settle out of the plankton, they will be about 1.1 inches. Young-of-the-year first appear in shallow waters between spring and summer.

<i>Natural Mortality</i>	Estimates of natural mortality are not available for this species.
<i>Diseases</i>	No information is available on diseases in grass rockfish.
<i>Predator/Prey Relationships</i>	Larval grass rockfish are diurnal feeders, but as adults they are nocturnal feeders. Juveniles and adults prey upon crustaceans, but the adults also eat other fish (such as juvenile surfperches and midshipmen). Predators of juveniles include birds, porpoises, and fishes, including rockfishes, lingcod, cabezon, and salmon. The adults are prey of sharks, dolphins, and seals.
<i>Competition</i>	Grass rockfish, commonly occurring in kelp beds and reef structures, may compete for space and food with other demersal fishes common to these habitats such as cabezon, lingcod, greenlings, and other rockfish such as gopher, black-and-yellow, China, quillback, copper, and vermilion. Among rockfishes, they share a fairly narrow depth distribution primarily with the black-and-yellow rockfish.
<i>Critical Habitat</i>	Grass rockfish are a shallow water species, most commonly found from the intertidal to 20 ft, but usually only the juveniles are found in tide pools. Among rockfishes, they have one of the shallowest and relatively narrow depth ranges. They are found in vegetated areas, particularly kelp beds, and around reef structures where the adults may be found hiding in crevices.
<i>Status of Stocks</i>	No formal stock assessment has been done for this species. Grass rockfish are taken in substantial numbers by finfish traps and commercial hook and line, particularly in central California. Grass rockfish are also taken in large numbers by spear fishermen and are also common for shore, pier, and small vessel recreational fishermen. Among recreational fishing modes, they are relatively more important to anglers fishing from shore as opposed to using boats.